AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listing of claims in this application.

Listing of Claims:

1-35. (Cancelled)

36. (Currently Amended) A die plate comprising:

(a) an upstream face;

(b) a downstream face;

(c) at least one passage having a first opening in said upstream face whereby molten resin at bulk temperature T_{melt} may be received and a second opening in said downstream face whereby molten resin may be extruded~~, wherein said die plate comprises a material selected from brass, stainless steel, and nickel steel~~; and

(d) a heater proximate said downstream face and proximate with said at least one passage at said downstream opening and capable of locally heating said molten resin to a temperature from about 245 ºC to about 372ºC, the local molten resin temperature being from 30-170ºC above bulk temperature T_{melt}~~; further comprising an insulation material contiguous with said heater and said die plate and concentric with said heater about said at least one passage proximate said downstream opening~~.

37. (Original) The die plate according to Claim 36, wherein said at least one passage is generally cylindrical and having a substantially uniform diameter from said upstream face to said downstream face.

38. (Original) The die plate according to Claim 36, wherein said heater is concentric with said at least one passage.

39. (Original) The die plate according to Claim 36, wherein said at least one passage passes

through a portion of said heater, such that said portion defines the wall of said passage proximate said downstream face.

40. (Cancelled)

41. (Original) The die plate according to Claim 36, further comprising an insulation material concentric with said at least one passage proximate said downstream face and forming at least a portion of said downstream face at said second opening.

42. (Original) The die plate according to Claim 36, further comprising an insulation material concentric with said at least one passage and contiguous with at least a portion of said heating means, and contiguous with said at least one passage at said exit opening.

43. (Original) The die plate according to Claim 36, wherein said die plate is a monolithic die plate.

44. (Original) The die plate according to Claim 36, wherein said die plate comprises a first plate having said upstream face and a second plate having said downstream face and said heater, said first and second plates fluidically connected by said at least one passage.

45. (Original) The die plate according to Claim 44, comprising a plurality of said at least one passage and wherein said first and second plates are fluidically connected by each of said at least one passage.

46. (Original) The die plate according to Claim 36, comprising a plurality of said at least one passage.

47. (Cancelled)

48. (Cancelled)

49. (Original) The die plate according to Claim 41, wherein said insulation material is selected from high temperature plastics, machineable ceramics, ceramics which may be deposited by spray coating techniques, and ceramics which may be deposited by vapor deposition techniques.

50. (Original) The die plate according to Claim 42, wherein said insulation material is selected from high temperature plastics, machineable ceramics, ceramics which may be deposited by spray coating techniques, and ceramics which may be deposited by vapor deposition techniques.

51. (Currently Amended) An extrusion die assembly comprising a die plate for preparing pellets having at least one passage including an initial, upstream zone having an opening for receiving a polymer melt having a bulk temperature T_{melt}, an intermediate zone for conveying said polymer melt, and a final, downstream zone terminating said extrusion die assembly at an exit opening whereby said polymer melt exits said extrusion die assembly~~, wherein said die plate comprises a material selected from brass, stainless steel, and nickel steel~~, further comprising a heating means for said downstream zone whereby at least a portion of said polymer melt may be locally heated to a temperature from about 245°C to about 372°C~~, the local molten polymer temperature being~~ from 30[[°]]-170°C above bulk temperature T_{melt}~~, further comprising an insulation material contiguous with said heating means and said die plate and concentric with said heating means about said at least one passage proximate said downstream zone~~.

52. (Previously presented) The extrusion die assembly according to Claim 51, the extrusion die further comprising a plurality of extrusion orifices forming a pattern, wherein said heating means comprises a heater concentric with the extrusion orifice pattern.

53. (Original) The extrusion die assembly according to Claim 51, wherein said heating means is proximate said exit opening.

54. (Original) The extrusion die assembly according to Claim 51, wherein said downstream zone further comprising an insulation material concentric with said passage and contiguous with at least a portion of said heating means and said die assembly.

55. (Original) The extrusion die assembly according to Claim 51, wherein said downstream zone further comprises an insulation material concentric with said passage and contiguous with at least a portion of said heating means, and contiguous with said passage at said exit opening.

56. (Original) The extrusion die assembly according to Claim 51, wherein said passage is generally cylindrical and having a substantially uniform diameter from said opening for receiving a polymer melt to said exit opening.

57. (Original) The extrusion die assembly according to Claim 51, wherein said die plate comprises a plurality of said at least one passage.

58. (Original) The extrusion die assembly according to Claim 51, wherein said die plate is a monolithic die plate.

59. (Previously Presented) The extrusion die assembly according to Claim 51, wherein said die plate comprises a first plate having an upstream face and comprising said upstream zone and a second plate having a downstream face and wherein said heating means, said first plate, and second plate are fluidically connected by said at least one passage.

60. (Original) The extrusion die assembly according to Claim 51, wherein said die plate comprises a plurality of said at least one passage.

61. (Previously Presented) The extrusion die assembly according to Claim 59, comprising a plurality of said at least one passage and wherein said first and second plates are fluidically connected by each of said at least one passage.

62. (Cancelled)

63. (Previously Presented) The extrusion die assembly according to Claim 54, wherein said insulation material is selected from high temperature plastics, machineable ceramics, ceramics which may be deposited by spray coating techniques, and ceramics which may be deposited by vapor deposition techniques.

64. (Previously Presented) The extrusion die assembly according to Claim 55, wherein said insulation material is selected from high temperature plastics, machineable ceramics, ceramics which may be deposited by spray coating techniques, and ceramics which may be deposited by vapor deposition techniques.

65-71. (Canceled)

72. (Currently Amended) An extrusion die assembly comprising an extrusion die for preparing pellets having a plurality of extrusion orifices and a monolithic heater for retrofitting a resin shaping apparatus having at least one extrusion die orifice, said heater having a first face to engage said at least one extrusion die orifice of said resin shaping apparatus and a second face opposite said first face, one or more passages between said first and second faces and substantially mating said at least one extrusion die orifice, whereby said orifice and said one or more passages are fluidically connected, and whereby a molten material at T_{melt} passing out of said at least one extrusion die orifice is locally heated to a temperature from about 245°C to about 372°C, the local molten material temperature being from 30[[°]]-170°C above T_{melt} by passing through said one or

more passages of said monolithic heater, and means to provide electrical energy to said monolithic heater, said heater comprising a plurality of said one or more passages, wherein said plurality of extrusion orifices are fluidically engaged with said plurality of said one or more passages in said monolithic heater.

73. (Currently Amended) A die plate comprising:

(a) an upstream face;

(b) a downstream face;

(c) at least one passage having a first opening in said upstream face whereby molten resin at bulk temperature T_{melt} may be received and a second opening in said downstream face whereby molten resin may be extruded; and

(d) an electrical heating element proximate said downstream face and proximate with said at least one passage at said downstream opening, wherein said electrical heating element is capable of locally heating said molten resin by direct contact of said molten resin with said electrical heating element~~, further comprising an insulation material concentric with said at least one passage and contiguous with at least a portion of said heating means, and contiguous with said at least one passage at said exit opening, wherein said insulation material is disposed on said downstream face proximate said electrical heating element such that during extrusion of said molten resin, said insulation material would be between said heating element and any cooling media into which said molten resin would be extruded, wherein said insulation material is selected from high temperature plastics, machineable ceramics, ceramics which may be deposited by spray coating techniques, and ceramics which may be deposited by vapor deposition techniques~~.

74. (Previously Presented) The die plate according to Claim 73, wherein said at least one passage passes through a portion of said heater, such that said portion defines the wall of said passage proximate said downstream face.

75. (Cancelled)

76. (Previously Presented) The die plate according to Claim 73, wherein said die plate is a monolithic die plate.

77. (Previously Presented) The die plate according to Claim 73, wherein said die plate comprises a first plate having said upstream face and a second plate having said downstream face and said heater, said first and second plates fluidically connected by said at least one passage.

78. (Previously Presented) The die plate according to Claim 73, wherein said die plate comprises a material selected from brass, stainless steel, and nickel steel.

79. (Cancelled)

80. (Currently Amended) An extrusion die assembly comprising a die plate for preparing pellets having at least one passage including an initial, upstream zone having an opening for receiving a polymer melt having a bulk temperature T_{melt}, an intermediate zone for conveying said polymer melt, and a final, downstream zone terminating said extrusion die assembly at an exit opening whereby said polymer melt exits said extrusion die assembly, further comprising an electrical heating means for said downstream zone whereby at least a portion of said polymer melt would be locally heated by direct contact of said polymer melt with said electrical heating means~~, wherein said downstream zone further comprises an insulation material concentric with said passage and contiguous with at least a portion of said heating means and said die assembly, wherein said insulation material is disposed on the die assembly at a location which during extrusion of said polymer melt would be between said electrical heating element and any cooling media into which the polymer melt would be extruded, wherein said insulation material is selected from high temperature plastics, machineable ceramics, ceramics which may be~~

~~deposited by spray coating techniques, and ceramics which may be deposited by vapor deposition techniques~~.

81. (Previously Presented) The extrusion die assembly according to Claim 80, wherein said heating means is proximate said exit opening.

82. (Cancelled)

83. (Previously Presented) The extrusion die assembly according to Claim 80, wherein said die plate is a monolithic die plate.

84. (Previously Presented) The extrusion die assembly according to Claim 80, wherein said die plate comprises a first plate having an upstream face and comprising said upstream zone and a second plate having a downstream face and wherein said heating means, said first plate, and second plate are fluidically connected by said at least one passage.

85. (Previously Presented) The extrusion die assembly according to Claim 80, wherein said die plate comprises a material selected from brass, stainless steel, and nickel steel.

86. (Cancelled)

87. (New) The extrusion die of claims 36 and 51, wherein said die plate comprises a material selected from brass, stainless steel, and nickel steel.

88. (New) The extrusion die of claims 36, 51 and 73, further comprising an insulation material contiguous with said heater and said die plate and concentric with said heater about said at least one passage proximate said downstream opening.

89. (New) The extrusion die of claims 73 and 80, wherein said insulation material is selected from high temperature plastics, machineable ceramics, ceramics which may be deposited by spray coating techniques, and ceramics which may be deposited by vapor deposition techniques.

90. (New) The extrusion die of claims 80, wherein said downstream zone further comprises an insulation material concentric with said passage and contiguous with at least a portion of said heating means and said die assembly.